



Kingdom of Morocco
Ministry Delegate to the Minister of Energy Mines,
Water and Environment, in charge of water

MOROCCAN WATER STRATEGY

BENABDELFADEL ABDELHAMID

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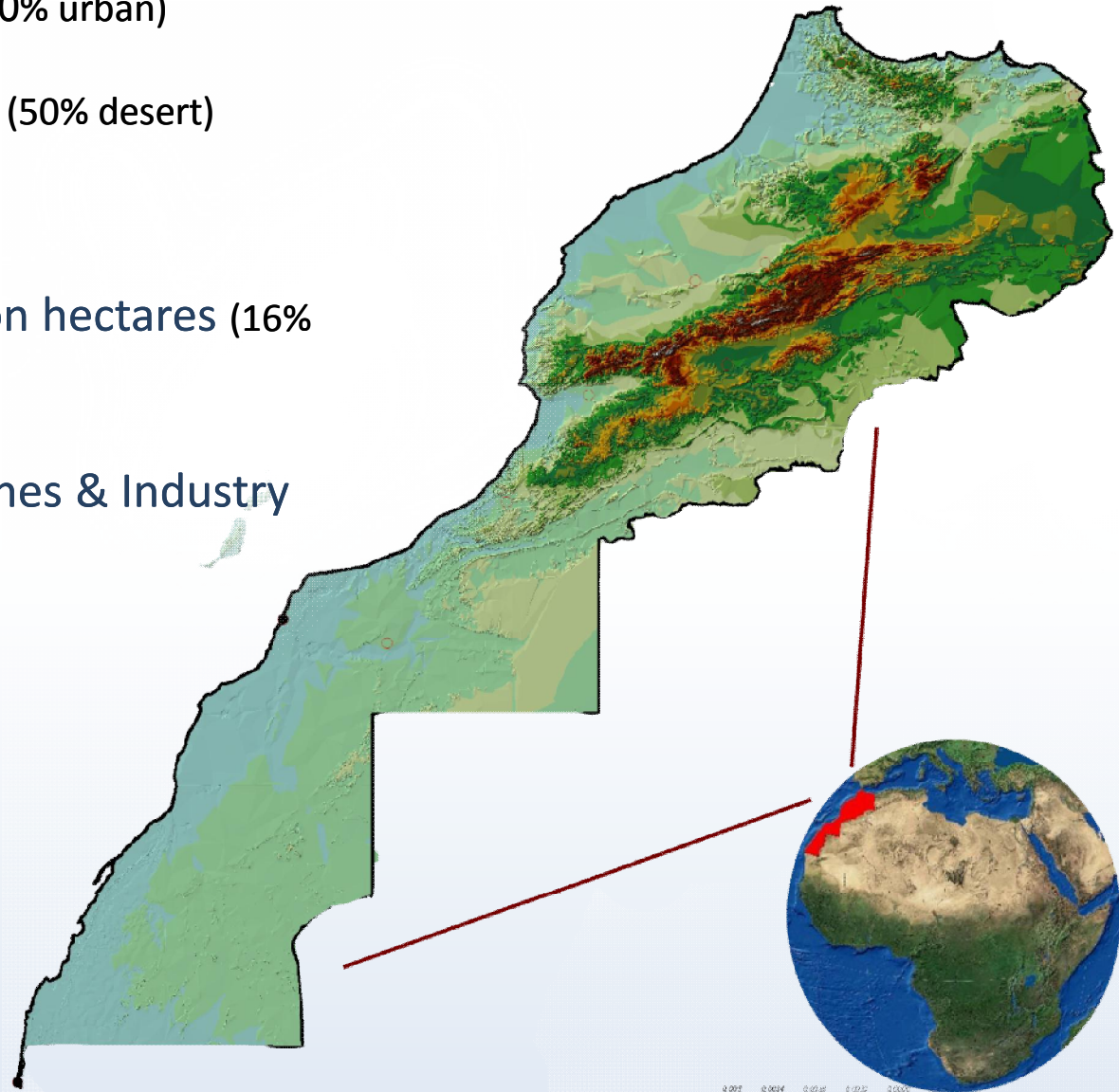
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Context of the water resources

General information

- **Population** : 32 million (60% urban)
- **Total area** : 710.850 Km² (50% desert)
- **Forest** : 12% of global
- **Agricultural land** : 9 million hectares (16% irrigated)
- **Economy**: Agriculture, Mines & Industry

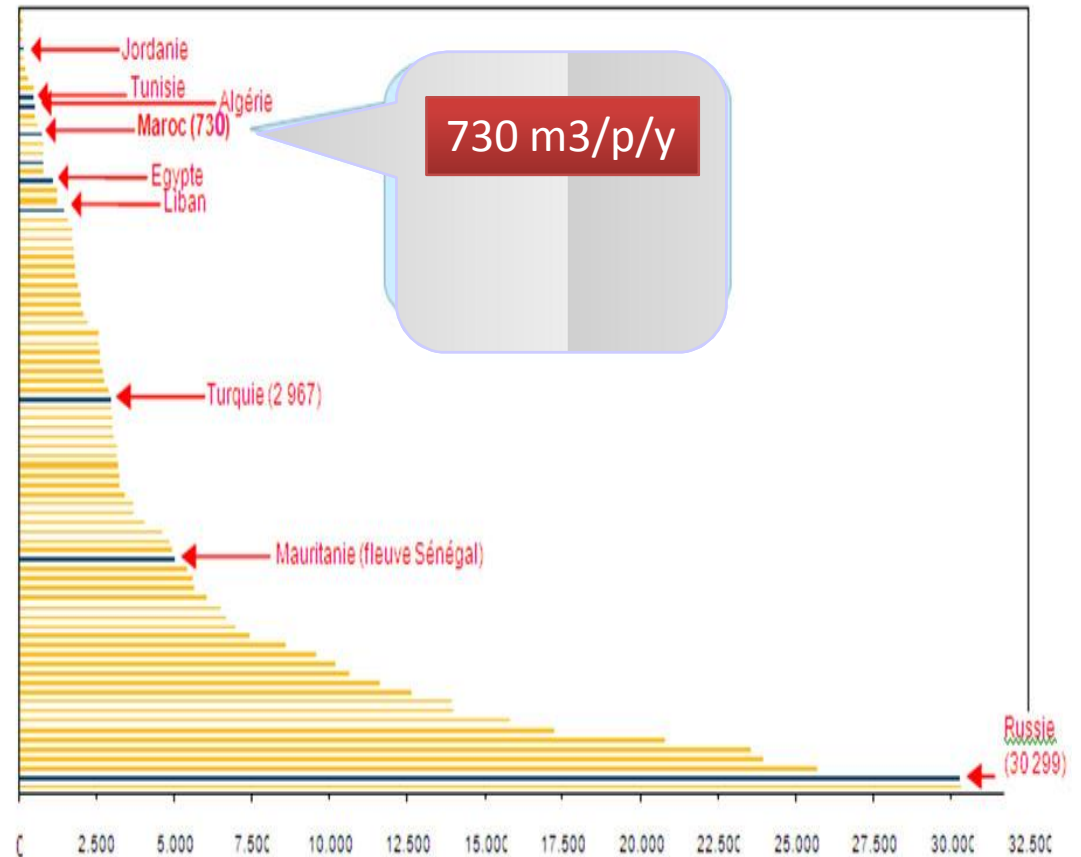
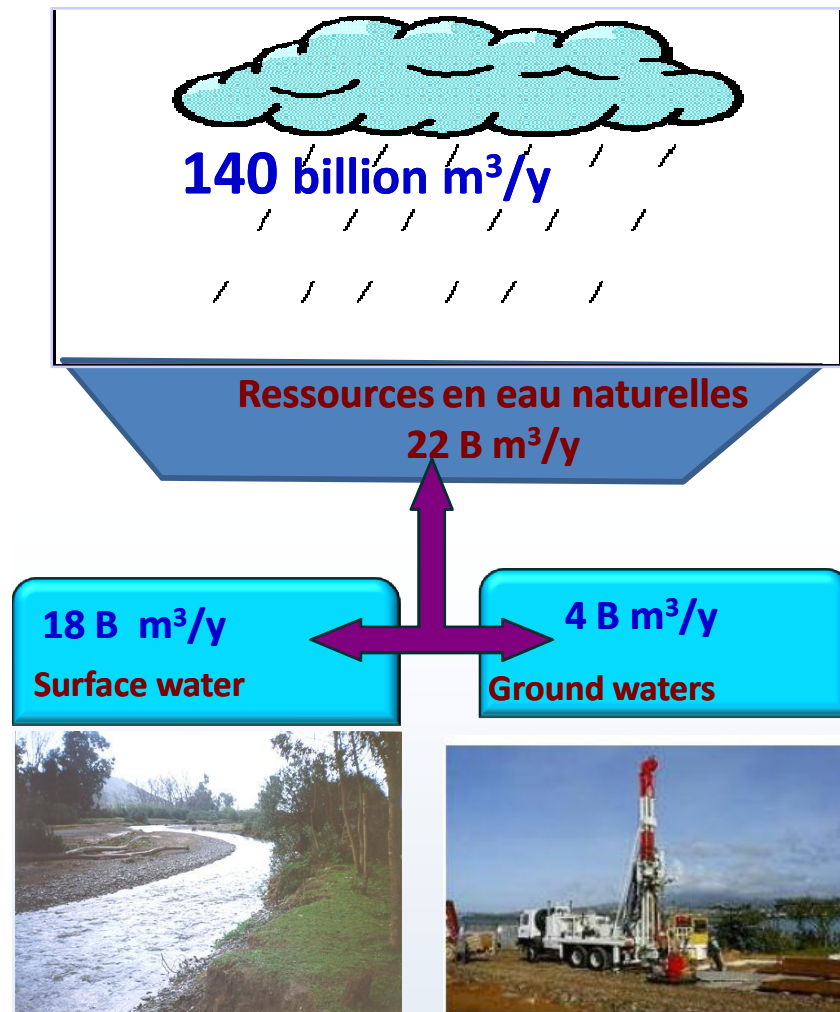


Main rivers in Morocco

River	Length (km)
Drâa	1 200
Sebou	614
Moulouya	600
Oum er-Rbia	600
Ziz	282
Gueris	270
Tensift	250
Bouregreg	240
Dadès	201
Oued Souss	180
Loukkos	176

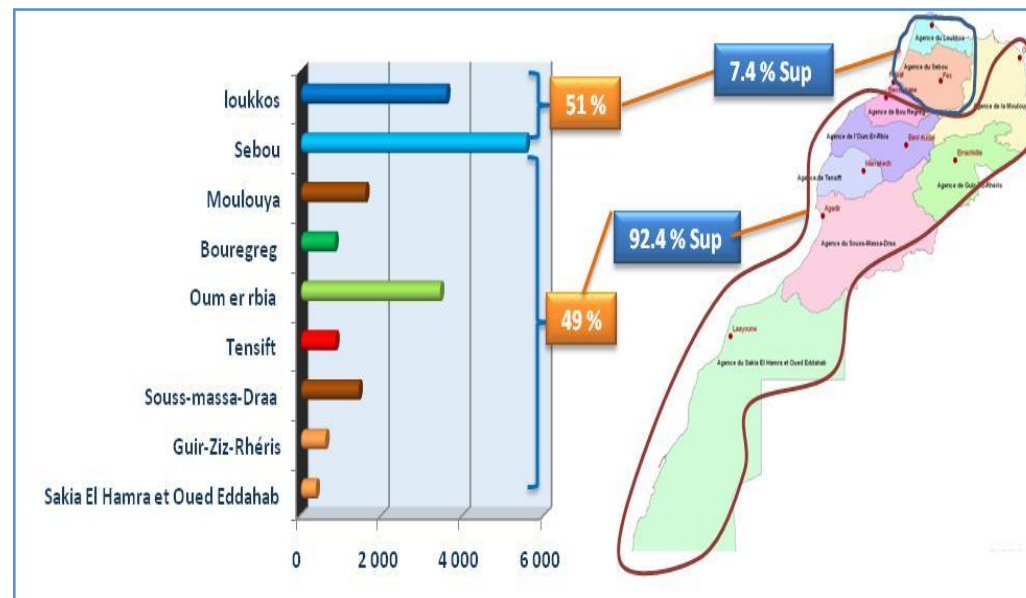
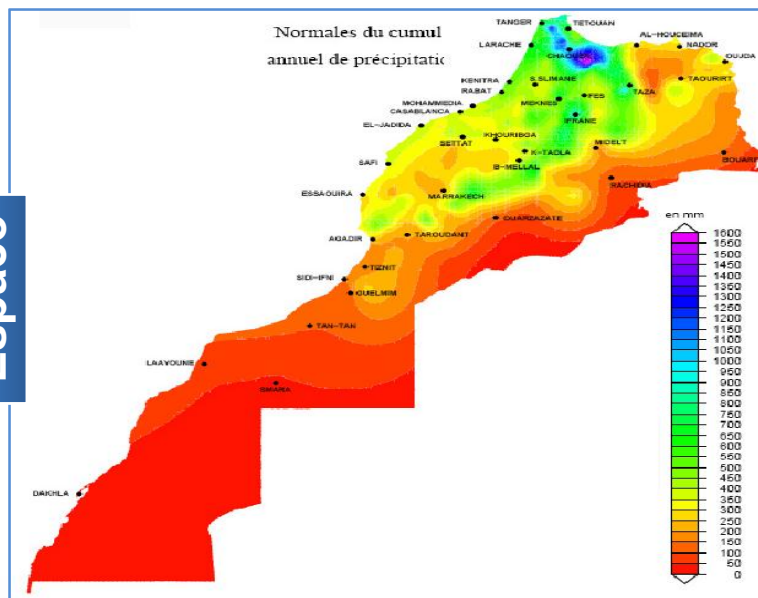


Characteristic of the climate and water resources

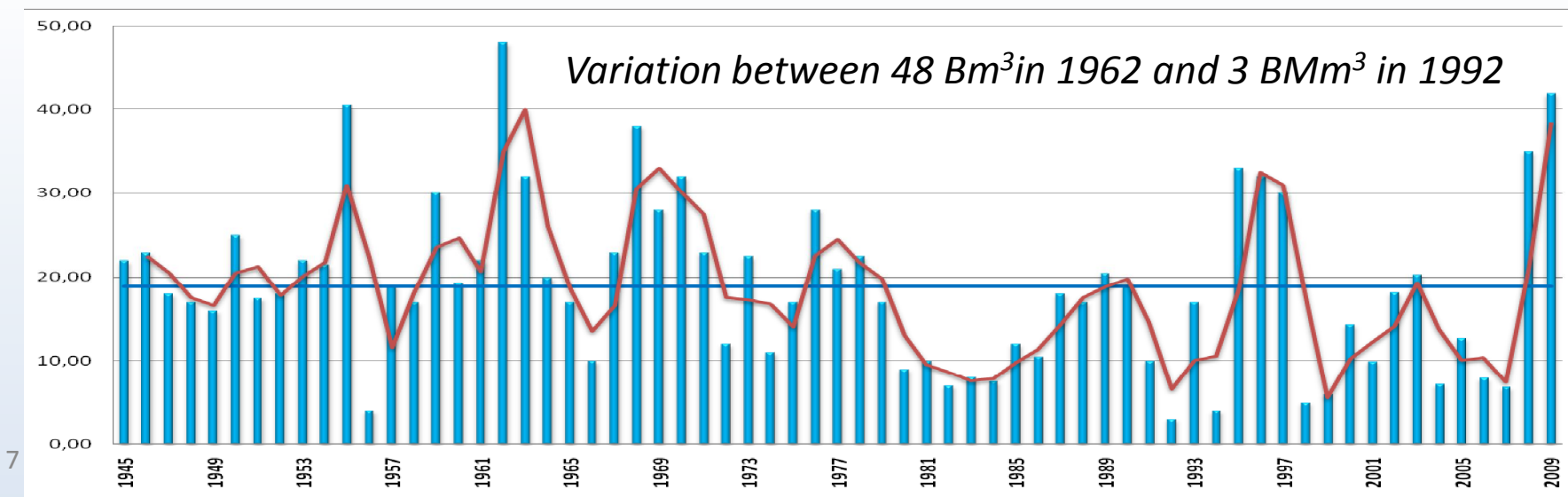


✦ Characteristic of the climate and water resources

Espace



Time



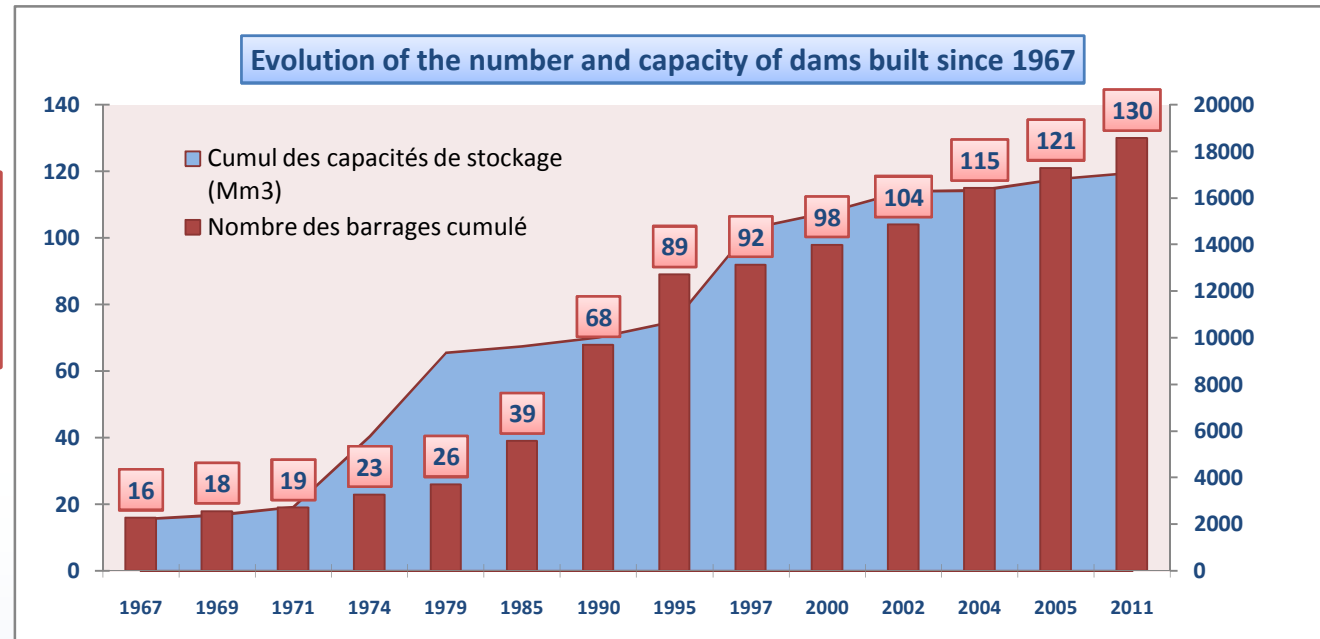
MAJOR ACHIEVEMENTS

✦ Major achievements

■ Mobilization of surface water:

Interannual irregularity requires to store water during wet years for use in dry years.

135 large dams with
a capacity of nearly
17.5 billion m³



■ Development of large-scale irrigation:

1.5 million hectares, of which 2 / 3 are equipped by the Government



✦ Major achievements

■ Drinking Water

Access to drinking water in urban areas: generalized and secure (100%)

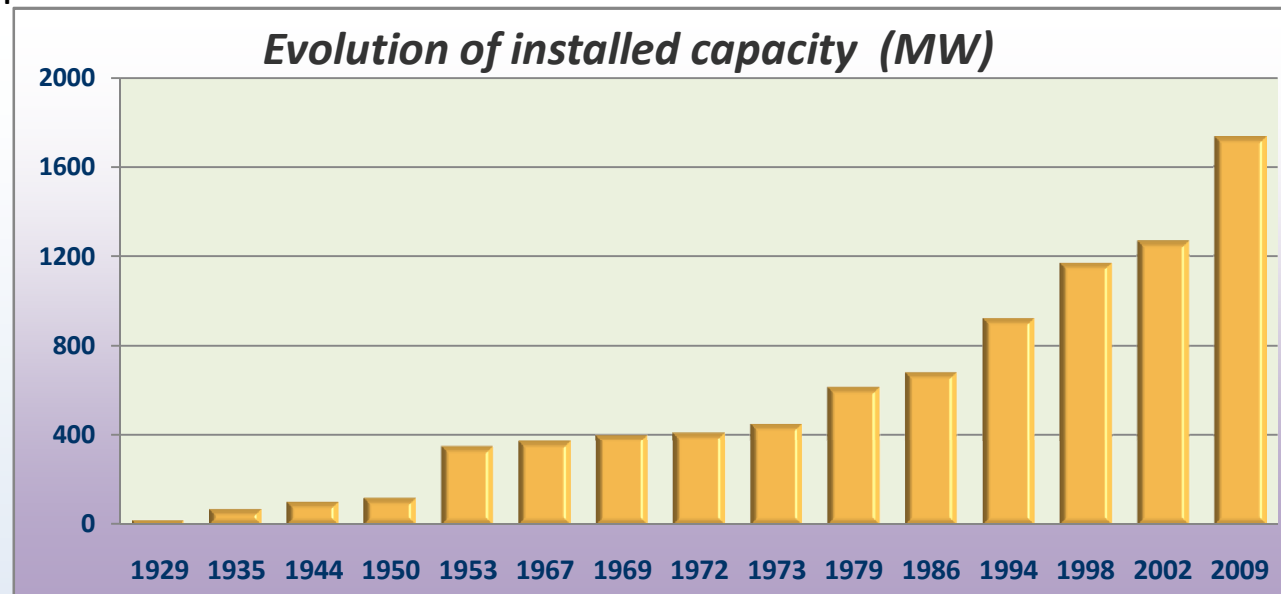
Access to drinking water in rural areas: goal achieved in a short time (94%)

■ Sewerage

- Sewerage connection rates overall: 72%

- Purification rate: 24%

■ **Hydropower** : Installed capacity 1730 MW, 10 % of national energy production



✦ Major achievements

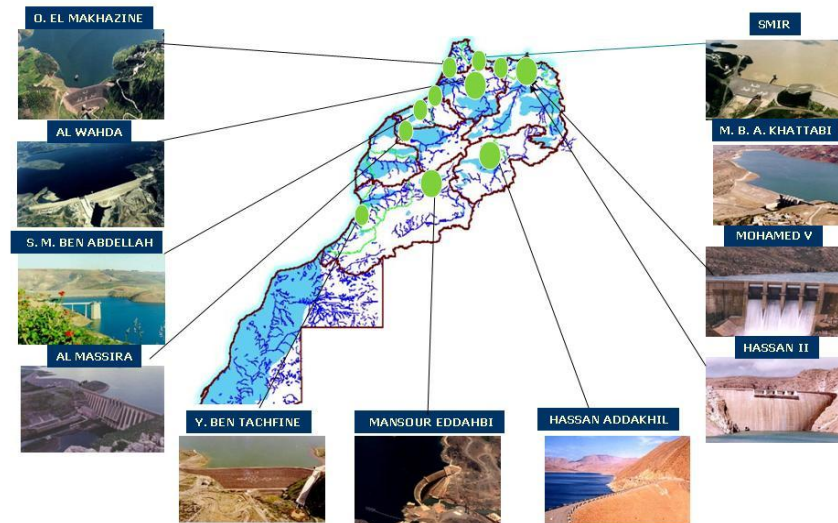
Water management system (Water Law 10-95)

- *Institutional:* Decentralization and deconcentration
 - Institutionalization of the Supreme Council for Water and Climate
 - Creation of 9 river-basins agencies throughout the national territory
 - Creation of provincial and prefectural committees of the Water
- *Planning*
 - National Plan for Water
 - Plan on Integrated Management of Water Resources at the regional level
- *Protection:*
 - Quantity: perimeter of protection and prohibition of groundwater
 - Quality: protection against pollution
- *Financial:*
 - Introduction of the principle sampler-pays and polluter-pays
- *Contract of groundwater water :* for imliquer users in the management and preservations of groundwater resources

★ Major achievements

- Protecting against flooding.
- Reducing the impact of drought

Essential role of the dams for the protection against the flooding and the droughts (Morocco)



The events of drought are accompanied by investment of the state to mitigate that phenomenon (grant farmers well program, tankers for the transport of water .. etc). In recent years with the role of dams and with the program of water supply the impact is less than before.

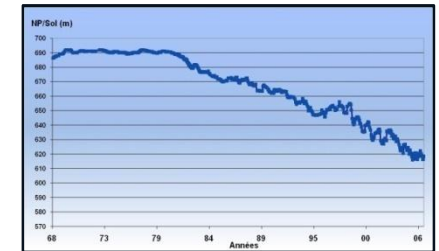
■ Development of national expertise:

Administration, engineering, business

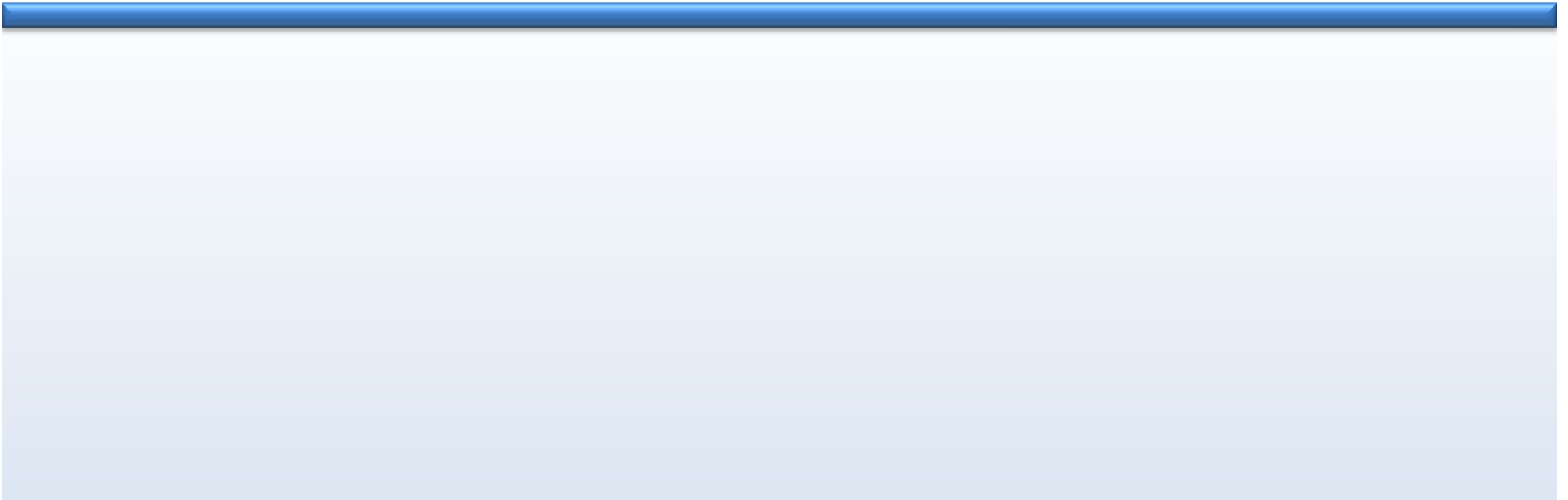
MAJOR CHALLENGES

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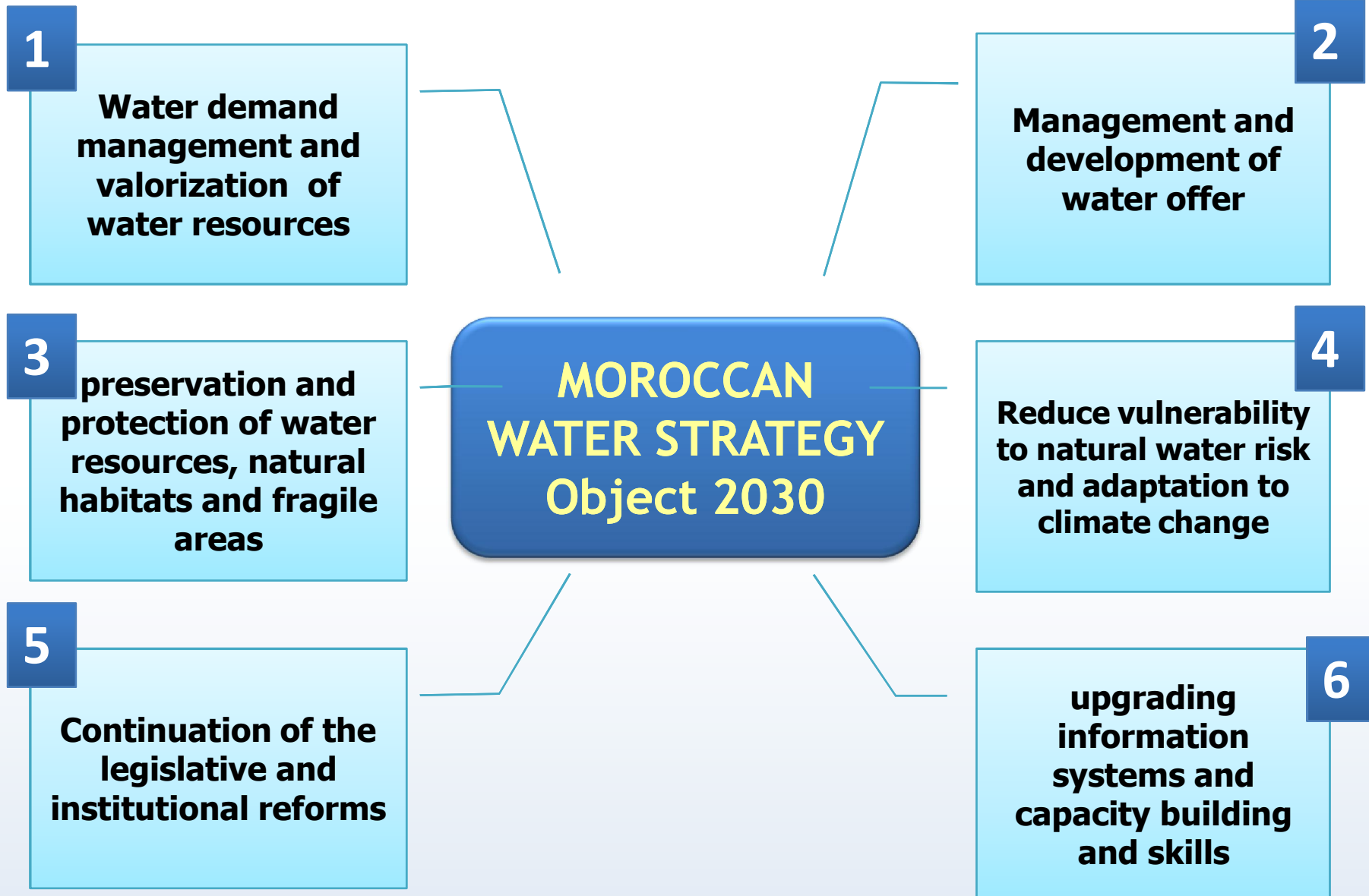
- Limited potential of water resources with increasing demand and overexploitation of groundwater
- Increase of extreme climate events as a result of climate change
- Low valorization of water
- Pollution of water resources
- Dams siltation



MOROCCAN WATER STRATEGY



NATIONAL STRATEGY FOR THE DEVELOPMENT OF THE WATER SECTOR



1- water demand management and valorization of water resources

💧 Saving water in Irrigation

- Conversion to local irrigation: potential to save 2 billion m³ per year (40 000 Ha per year)
- Improvement of the efficiency of water supply system networks in the irrigated areas: potential to save 400 million m³ per year

💧 Saving water in network of drinking, Industrial & Tourism

- Improvement of the efficiency of urban water supply networks: potential to save 120 million m³ per year
- Encouraging the use of technology to save water
- Revision of the tariff system

2- Management and development of water offer

💧 Mobilization of conventional water : 2.5 billions m³ / year

- Construction of 3 larges dams per year (more than 1,7 additional Bn m³ mobilized in the long term)
- Reinforces the program of small dams for local development
- North-south water transfer programs : 800 MCM/Y EAR

💧 Mobilization of non-conventional water

- Desalination and demineralization programs: 400 MCM/Y
- Wastewater treatment and re-use programs: 300 MCM/Y
- Collecting rainwater

3- preservation and protection of water resources, natural habitats and fragile areas

💧 Safeguard and reconstitution of the groundwater

Limiting pumping of groundwater, Reinforcing the control system (water police), Introduction of Safeguard perimeters , Programs to artificially refill the groundwater (storage of 180 Mm³ per year) , Reinforcement of the ABH responsibility in groundwater management and generalization of the groundwater contracts.

💧 Protect water resources against pollution

- Implementation of the national program of sanitation and wastewater treatment and solid waste program : access rate to sanitation from 90% in 2030
- National Program for Prevention and struggle against industrial pollution
- Implementation of the national plan of household and similar waste

4- Reduce vulnerability to natural water risk and adaptation to climate change

💧 Improve protection against flood

- Complete the actions set out in the National Plan for Protection against Floods: 20 sites to be protected by year
- Integration of flood risk in urban planning and Land Management;
- Implement an alert system in case of flooding

💧 Implement a proactive plans to mitigate drought

- Development of regional plans against drought
- Establishment of financial mechanisms to support.

5- Continuation of the legislative and institutional reforms

- 💧 Completing the legal framework necessary for the implementation of all provisions of water Law N°10-95
- 💧 Proofreading of the Water Law and its implementing legislation in order to enrich and adapt them after 15 years of field application

6- upgrading information systems and capacity building and skills

- 💧 Applied Scientific Research
- 💧 Modernization of measures networks
- 💧 Modernization of Administration and Development Skills

THANK YOU

